Floating period of sargassacean thalli estimated by the change in density
Kousuke Yatsuya

The density (fresh weight/volume) of the detached thalli of four sargassacean species (Myagropsis myagroides, Sargassum horneri, S. patens, S. siliquastrum) was measured weekly to determine their floating period. Thalli of the four species were collected with respect to the difference in their reproductive stage, and their floating abilities at different stages were determined. Floating thallus was ballasted with pre-weighed leads until the final addition of a weight caused sinking. The density and floating period of sargassacean thalli were dependent on the species and the specimens’ reproductive stage. The floating period of thalli detached before maturation was estimated to be between 4 and 14 weeks. However, thalli detached during maturation had a floating period between 1 and 8 weeks, and those detached after maturation sank within 2 weeks. Sargassum horneri had the lowest density and the longest floating period among the four species investigated and this may explain the high abundances of S. horneri in floating seaweeds observed in the Sea of Japan.

Population dynamics of Sargassum autumnale
Yoshida in Maizuru Bay, Sea of Japan
Kousuke Yatsuya

The population of Sargassum autumnale in Maizuru Bay was investigated using methods of permanent quadrat and mapping over 52 months. The density of thalli varied from 10 to 30 individuals per m². The monthly mortality rate increased to 26% from disturbance by a typhoon, and it was less than 15% in other periods. Loss of thalli was recorded throughout the year, not for a particular season. Juvenile thalli occurred in autumn and winter, and their density ranged from 0 to 50.3 individuals per m². The density of adult thalli increased following the mass occurrence of juveniles. More than half of thalli less than 1 year old become larger than the minimum reproductive size (20 cm of total length).

Submerged suspension culture system of iwagaki oyster Crassostrea nippona using an artificial steel reef
Norio Sirafuji, Yozo Wada, Tomokazu Nishigakil, Kousuke Yatsuya and Koji Takeno

A new culture system, ‘submerged suspension culture system’, has been devised for iwagaki oyster Crassostrea nippona in the open sea. This system consisted of an artificial steel reef and ropes of 5 m in length with seeds of the oyster, and floating buoy attached at one end of the rope. The culture experiment by the new system was carried out at a 10m depth in the sea from February 2003 to June 2006. The results obtained from the experiment were summarized as follows.
(1) All the culture facilities were not damaged by typhoons or winter storms during the experiment.
(2) About 60% of the oysters after three-year culture were reached in the harvestable size of more than 200 g in total weight including shell. The condition index (=soft tissue weight / total weight) of them was greater than that of wild oysters in same commercial size.
(3) There were few attached organisms observed on the cultured oysters and the culture facilities, when compared with the hanging culture. As a result, the maintenance work of the system was unnecessary. The present study suggested that the new culture system was effective and could be used for commercial iwagaki oyster culture in the open sea.
In order to clarify the growth of young Japanese flounder *Paralichthys olivaceus* (ca. 2 months to 15 months post-hatch, size ca. 9 to 40 cm TL) in semi-enclosed waters, we examined their somatic growth and condition factor in two bays, Kumihama Bay and Aso Bay. Specimens sampled from Kumihama Bay showed lower growth rates and condition factor values compared to those from Aso Bay. The stomach content analysis revealed that most of the flounder preyed extensively on fish throughout the year in Aso Bay, whereas approximately half of the fish sampled in spring and summer showed stomach contents of the flounder had changed their diet from fish to crustaceans in Kumihama Bay. Although there were no significant differences in the mean stomach contents indices used as an index of feeding intensity between the two bays, these indices for fish that fed on crustaceans were significantly lower than those that fed on fish. These results indicate that the inferior growth of young flounder in Kumihama Bay was due to the low availability of small fish prey such as Japanese anchovy and gobies during the high growing season in spring and summer.

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